

wherein said at least one amino acid residue is selected from the group consisting of:

the 11th Tyr, 16th Glu, 49th Asn, 84th Glu, 144th Ser, 167th Gln, 169th Tyr, 178th Ala, 188th Glu, 190th Asn, 205th His and 209th Gln, and

said mutant α -amylase possesses increased heat resistance and maintains resistance to chelating agents when compared to SEQ ID NO:1.

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2. (Amended) A mutant α -amylase obtained by making a substitution of a sequence corresponding to 11 to 100 amino acid residues from the amino terminus of SEQ ID NO: 1 or by making a substitution of a sequence corresponding to 11 to 100 amino acid residues from the ~~amino terminus~~ of an amino acid sequence having at least 70% homology to SEQ ID NO: 1,

with another amino acid sequence that encodes a liquefying α -amylase protein,

wherein said mutant α -amylase possesses increased heat resistance and maintains resistance to chelating agents when compared to SEQ ID NO:1.

3. (Amended) The mutant α -amylase according to Claim 2, wherein an amino terminal sequence from 1st Asp through 19th Gly

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of SEQ ID NO:1 or an amino terminal sequence corresponding to 1st Asp through 19th Gly of SEQ ID NO:1 of a sequence having at least 70% homology to SEQ ID NO:1, is substituted with an amino acid sequence encoding another liquefying α -amylase.

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4. (Amended) The mutant α -amylase according to Claim 2 or 3, wherein said liquefying α -amylase comprises SEQ ID NO:2.

✓ 5. (Amended) A mutant α -amylase obtained by introducing at least two mutations into SEQ ID NO:1 or an amino acid sequence having at least 70% homology to SEQ ID NO:1,

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wherein a first mutation is a substitution or a deletion of at least one amino acid residue selected from the group consisting of the 11th Tyr, 16th Glu, 49th Asn, 84th Glu, 144th Ser, 167th Gln, 169th Tyr, 178th Ala, 188th Glu, 190th Asn, 205th His and 209th Gln, and

wherein a second mutation is a substitution of at least one amino terminal sequence from 1st Asp through 11th Tyr or 100th Asp, and

wherein said mutant α -amylase possesses increased heat resistance and maintains resistance to chelating agents when compared to SEQ ID NO:1.

6. (Amended) The mutant α -amylase according to Claim 5,
wherein said first mutation comprises:

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the substitution of an amino acid residue selected from the group consisting of: the 11th Tyr of SEQ ID NO:1 with Phe, the 16th Glu of SEQ ID NO:1 with Pro, the 49th Asn of SEQ ID NO:1 with Ser, the 167 Gln of SEQ ID NO:1 with Glu, the 169th Tyr of SEQ ID NO:1 with Lys, the 190th Asn of SEQ ID NO:1 with Phe, the 205th His of SEQ ID NO:1 with Arg, or the 209th Gln of SEQ ID NO:1 with Val,

and wherein said second mutation comprises:

substituting an amino terminal sequence from 1st Asp through 19th Gly of SEQ ID NO:1 with an amino acid sequence from 1st His to 21st Gly of SEQ ID NO:2.

Attached hereto is a marked-up version showing the changes made to the application by this Amendment.